

What is claimed is:

1. A controller for controlling a device connected thereto, said controller comprising:

5 memory means for storing a control program and correlation data, said control program specifying said device by an object name, said correlation data correlating said control program with device data on said device; and

10 communication processing means for accessing said device to thereby control said device by said control program by referencing said correlation data to identify said device data from said object name.

15 2. The controller of claim 1 wherein said communication processing means functions to determine an address through which said device is accessed and to store said address to be accessed as said correlation data.

20 3. The controller of claim 2 further comprising:

a controller memory, data being transmitted between said device and said controller through a specified area of said controller memory; and

25 mapping means for mapping said controller memory according to memory size of said device and storing results of the mapping as said correlation data.

4. The controller of claim 1 wherein said device stores operation data required for operating said device, said controller functioning to obtain said operation data, to store said operation data and to download said stored operation data to said device when said device starts to be operated.

25 5. The controller of claim 2 further comprising:

a controller memory, data being transmitted between said device and said controller through a specified area of said controller memory, said controller memory having a specified area storing abnormality data on an abnormal condition of said device; and

means for outputting maintenance data for said abnormal condition of said device according to said abnormality data and said correlation data.

6. A tool attachable to a controller, said controller controlling a device  
5 connected thereto, said tool comprising:

control program creating means for creating a control program, said control program specifying said device by an object name;

correlation data creating means for creating correlation data correlating said control program with device data on said device; and

10 downloading means for downloading said correlation data created by said correlation data created means to said controller.

7. A system comprising:

15 a controller for controlling a device connected thereto, said controller including memory means for storing a control program which specifies said device by an object name; and

a tool which is attachable to said controller;

said tool including:

20 control program creating means for creating a control program, said control program specifying said device by an object name;

correlation data creating means for creating correlation data correlating said control program with device data on said device; and

downloading means for downloading said correlation data created by said correlation data created means to said controller;

25 said controller serving to receive said downloaded correlation data from said tool and to store said received correlation data in said memory means;

said controller accessing said device to thereby control said device by said control program by referencing said received correlation data stored in said memory means to identify said device data from said object name.

8. A method of operating a controller, said controller including memory means for storing a control program for controlling a device and correlation data correlating said control program with device data on said device, said method comprising the steps of:

5 identifying an access address for said device by referencing said correlation data stored in said memory means when said device is accessed by said control program; and accessing said identified access address.

9. A method of reusing a control program, said control program being used  
10 in a controller which controls a device connected to said controller, there being correlation data which correlate said control program with said device, said correlation data include an access address for making an access to said device, said method comprising the steps of:

15 associating said control program with said correlation data as forming a pair;  
connecting another controller to said device for controlling said device;  
copying in said another controller both said control program and said correlation data forming said pair;  
correcting said access address of said device in said correlation data by replacing said access address with another access address of said device in said another controller;  
20 and  
controlling said device by said another controller.

10. A method of controlling correlation data stored in a controller, said controller comprising memory means for storing a control program for controlling said device and said correlation data, said control program specifying said device by an object name, said correlation data correlating said control program with device data on said device and including a parameter representing at least operation conditions of said device, said controller accessing said device to thereby control said device by said control program by referencing said correlation data to identify said device data from said object name;

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30 said method comprising the steps of:

downloading said parameter stored as correlation data to said device when said controller starts an operation; and

uploading and storing said set parameter set to said device when said controller ends said operation.

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11. A method of monitoring devices for an abnormal condition, said method comprising the steps of:

providing a control program for controlling a controller connected to said devices;

providing memory means for storing correlation data correlating said control

10 program and said devices, said controller functioning to make an access to any of said devices by identifying an access address by referencing said correlation data stored in said memory means when said control program makes said access;

providing a status recording area on a controller memory contained in said controller for storing status data individually for each of said devices; and

15 operating said controller so as to cause said controller to monitor said status recording area ; and

operating said controller, when an abnormal condition is detected by monitoring said status recording area, so as to access said memory means to thereby obtain correlation data of the device associated with said abnormal condition and to transmit a specified data to an external peripheral apparatus.

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20 12. A method of data processing comprising the steps of:

25 connecting a data processor to a network to which a controller and a device are connected, said controller storing a control program and correlation data, said control program specifying said device by an object name, said correlation data correlating said control program with device data on said device, said controller controlling said device by accessing said device by said control program by referencing said correlation data to identify said device data from said object name, said data processor including at least an equivalent of said control program;

30 obtaining communication data by receiving communications between said controller and said device through said data processor;

carrying out said control program stored in said data processor according to said obtained communication data and thereby carrying out a data processing operation; and transmitting results of said data processing operation to said controller.